

Application for Federal Assistance SF-424

*** 1. Type of Submission:**

- ☐ Preapplication
☐ Application
☐ Changed/Corrected Application

*** 2. Type of Application:**

- ☐ New
☐ Continuation
☐ Revision

*** If Revision, select appropriate letter(s):**

*** Other (Specify)**

*** 3. Date Received:**

4. Applicant Identifier:

5a. Federal Entity Identifier:

*** 5b. Federal Award Identifier:**

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

*** a. Legal Name:**

*** b. Employer/Taxpayer Identification Number (EIN/TIN):**

*** c. Organizational DUNS:**

d. Address:

*** Street1:**

Street2:

*** City:**

County:

*** State:**

Province:

*** Country:**

USA: UNITED STATES

*** Zip / Postal Code:**

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

*** First Name:**

Middle Name:

*** Last Name:**

Suffix:

Title:

Organizational Affiliation:

*** Telephone Number:**

Fax Number:

*** Email:**

Application for Federal Assistance SF-424

9. Type of Applicant 1: Select Applicant Type:

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

11. Catalog of Federal Domestic Assistance Number:

CFDA Title:

* 12. Funding Opportunity Number:

* Title:

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

* 15. Descriptive Title of Applicant's Project:

Attach supporting documents as specified in agency instructions.

Application for Federal Assistance SF-424**16. Congressional Districts Of:**

* a. Applicant MI-008

* b. Program/Project MI-001, MI-002

Attach an additional list of Program/Project Congressional Districts if needed.

MI-003, MI-004, MI-005, MI-009, MI-011, MI-013, MI-014, MI-015

17. Proposed Project:

* a. Start Date: 07/01/14

* b. End Date: 06/30/16

18. Estimated Funding (\$):

* a. Federal \$150,000.00
* b. Applicant \$135,561.00
* c. State \$0.00
* d. Local \$0.00
* e. Other \$0.00
* f. Program Income \$0.00
* g. TOTAL \$285,561.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- ☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .
- ☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- ☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.) Applicant Federal Debt Delinquency Explanation**☐ Yes ☒ No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Ms. * First Name: Julie
Middle Name:
* Last Name: Bennett
Suffix:

* Title: Trust Manager

* Telephone Number: 517-371-7468

Fax Number: 517-484-6549

* Email: jbennett@gift.org

* Signature of Authorized Representative:

* Date Signed: 05/20/2014

Application for Federal Assistance SF-424

* Applicant Federal Debt Delinquency Explanation

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY						
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		\$	\$	\$	\$	\$
2.						
3.						
4.						
5. Totals		\$	\$	\$	\$	\$

SECTION B - BUDGET CATEGORIES					
6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
a. Personnel	\$	\$	\$	\$	\$
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual					
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)					
j. Indirect Charges					
k. TOTALS (sum of 6i and 6j)	\$	\$	\$	\$	\$

7. Program Income	\$	\$	\$	\$	\$
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Authorized for Local Reproduction

SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8.	\$	\$	\$	\$	
9.					
10.					
11.					
12. TOTAL (sum of lines 8-11)	\$	\$	\$	\$	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$	\$	\$	\$	\$
14. Non-Federal					
15. TOTAL (sum of lines 13 and 14)	\$	\$	\$	\$	\$
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (Years)				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16.	\$	\$	\$	\$	
17.					
18.					
19.					
20. TOTAL (sum of lines 16-19)	\$	\$	\$	\$	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges:		22. Indirect Charges:			
23. Remarks:					

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

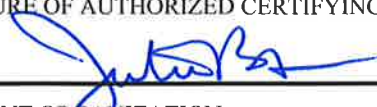
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application. 2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives. 3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain. 4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency. 5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F). 6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), which prohibits discrimination on the | <ol style="list-style-type: none"> basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VII of the Civil Rights Act of 1968 (42 U.S.C. 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application. 7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases. 8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. 1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds. |
|--|---|

<p>9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. 276a to 276a-7), the Copeland Act (40 U.S.C. 276c and 18 U.S.C. 874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333), regarding labor standards for federally-assisted construction subagreement.</p> <p>10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.</p> <p>11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in flood plains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).</p>		<p>12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271 et seq.) Related to protecting components or potential components of the national wild and scenic rivers system.</p> <p>13. Will assist the awarding agency in assuring compliance will Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.).</p> <p>14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.</p> <p>15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) Pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.</p> <p>16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4801 et seq.) Which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.</p> <p>17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."</p> <p>18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.</p>
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SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	TITLE <i>Manager</i>
APPLICANT ORGANIZATION <i>GLFT</i>	DATE SUBMITTED <i>5-20-14</i>

EPA Project Control Number

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

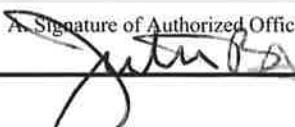
Julie Bennett, Manager

Typed Name & Title of Authorized Representative

 5-20-14
Signature and Date of Authorized Representative

**Preadward Compliance Review Report for
All Applicants and Recipients Requesting EPA Financial Assistance**

Note: Read instructions on other side before completing form.

I. Applicant/Recipient (Name, Address, State, Zip Code). Great Lakes Fishery Trust; 230 N. Washington Sq., Ste. 300, Lansing, MI 49833		DUNS No. 623353120
II. Is the applicant currently receiving EPA assistance? No		
III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.) n/a		
IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective action taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.) n/a		
V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3)) n/a		
VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below. Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>		
a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b). Yes <input type="checkbox"/> No <input type="checkbox"/>		
b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable by persons with disabilities, explain how a regulatory exception (40 C.F.R. § 7.70) applies. Yes <input type="checkbox"/> No <input type="checkbox"/>		
VII.* Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex, age, or disability in its programs or activities? (40 C.F.R. § 5.140 and § 7.95) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
a. Do the methods of notice accommodate those with impaired vision or hearing? Yes <input type="checkbox"/> No <input type="checkbox"/>		
b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
c. Does the notice identify a designated civil rights coordinator? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
VIII.* Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. § 7.85(a)) No		
IX.* Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166) No		
X.* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator. n/a		
XI.* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet address for, or a copy of, the procedures. n/a		
<p align="center">For the Applicant/Recipient</p> <p>I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.</p>		
A. Signature of Authorized Official 	B. Title of Authorized Official Manager	C. Date 5/20/2014
<p align="center">For the U.S. Environmental Protection Agency</p> <p>I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preaward compliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisions of 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statutes and EPA regulations.</p>		
A. Signature of Authorized EPA Official	B. Title of Authorized EPA Official	C. Date
See ** note on reverse side		

Place-based Models for Stewardship Education in K–12
Application to the Environmental Protection Agency 2014
Environmental Education Grant Competition
Revised May 2014

Submitted by
Great Lakes Fishery Trust
230 N. Washington Square, Suite 300
Lansing, MI 48933

(3) WORK PLAN

A. Project Summary

- (i) **Organization and Partnerships:** The applicant for *Place-based Models for K–12 Stewardship Education* is the Great Lakes Fishery Trust (GLFT), on behalf of the Great Lakes Stewardship Initiative (GLSI). The purpose of the GLSI is to create the next generation of Great Lakes stewards. The GLSI was launched in 2007 in Michigan with an unprecedented \$12 million, 10-year commitment by the GLFT. The GLSI is supported by a small central staff (a coordinator and an evaluator) and implemented by nine regional hubs, which bring the GLSI to life in schools and communities in their service areas. They use three strategies—place-based education, sustained professional development for K–12 teachers, and school-community partnerships—to accomplish the GLSI’s goals. We know the GLSI is working when classes of students and their teachers join with community organizations to execute rigorous studies that address local environmental stewardship needs and reflect the schools’ curricula. In the 2012–2013 school year, the GLSI worked with 374 teachers in 123 schools across Michigan to provide 14,420 students with place-based stewardship experiences. Since 2007, more than 600 teachers and more than 50,000 students have participated in place-based environmental education (EE) supported by the GLSI.

This project builds on our efforts and experiences to date and harvests and distributes the fruits of those efforts in order to improve the GLSI, provide useful tools for other practitioners, and advance the field of EE. The project will be implemented by the GLSI’s central and hub staffs, working collaboratively, with support from an expert panel including Dr. Constance Flanagan of the University of Wisconsin–Madison; Dr. Shelley Billig of RMC Research Corporation; and Dr. Doris Williams of the Rural School and Community Trust. The project will be coordinated by Dr. Mary Whitmore, the GLSI coordinator, and will take place in selected urban, suburban, and rural K–12 Michigan schools and communities served by participating GLSI hubs.

- (ii) **Summary.** The GLFT is not currently receiving funding, and has not previously received funding, for this or any related project from the Environmental Protection Agency’s (EPA) EE Grant Program. Our project will serve as a model program for creating behavioral change that benefits the environment by demonstrating, documenting, and disseminating a variety of methods for establishing and sustaining quality place-based EE in diverse K–12 settings. Place-based EE uses the local community as the starting point for teaching and learning; involves students in real-world environmental issues in local communities; is conducted with the active involvement of local organizations that work on those issues; and focuses on positive outcomes for learning and community betterment. Place-based EE, community-based EE, and other variants that are robust, hands-on, project-based, and outcome-oriented are generally considered premier strategies for cultivating environmental literacy and stewardship, and are encouraged and supported by numerous grant programs. While the practice is recognized for its high potential, place-based EE is difficult to establish in K–12—and even harder to sustain. If we are serious about expanding the practice and sustaining it for the long term, **we need to better understand what is required to support and sustain these types of learning experiences for students.** We think no other organization in the nation has GLSI’s wealth of experience in: a) establishing place-based EE in diverse K–12 settings; and b) exploring and testing strategies for sustaining place-based EE over the long term.

Through this project, the GLSI will invest in 9 to 12 place-based EE efforts that span urban, suburban, and rural contexts, and elementary, middle, and high school grade levels; document 9 of these efforts via vibrant, multimedia case studies; collaboratively develop and adopt quality principles for place-based EE; create related rubrics and planning tools for place-based EE in the GLSI’s context; and develop a white paper on the benefits of place-based EE that identifies and describes the variations in expectations and goals for this type of teaching and learning in urban, suburban, and rural settings.

The project provides a vision and standards for advancing the practice of EE by: a) demonstrating how place-based EE focuses on local issues, including underrepresented environmental issues, and thereby expands the conversation about the environment; b) documenting the key services and resources that regional GLSI hubs provide (to fill what we view as an otherwise persistent, widespread void of support and infrastructure for EE in many K–12 schools); and c) articulating quality principles for place-based EE to ensure such learning experiences are educationally rigorous and environmentally beneficial.

The project’s **goals and objectives** are:

1. To support and demonstrate high-quality place-based EE that responds to different needs in diverse contexts.

Objective a: Support 9 to 12 diverse teams of teachers, community partners, and students that implement place-based EE efforts that cultivate stewardship and environmental literacy and benefit the local community's environment.

Objective b: Support teams that can demonstrate how place-based EE can be adapted to a range of settings and engage varied and diverse populations in environmental discussion and action pertinent to their communities.

2. To create new understanding of what quality place-based EE consists of and how it takes shape in highly diverse contexts.

Objective a: Collaboratively define principles of quality place-based EE, drawing on the perspectives and experiences of educators, GLSI hub staff, and community partners in urban, rural, and suburban contexts; on experts; and on the published literature.

Objective b: Identify the array of potential benefits offered by place-based EE, how these map onto the needs and expectations of urban, suburban, and rural schools, and the implications for support providers wishing to work in a variety of K–12 and community contexts.

3. To arm the GLSI's network and the broader EE community with needed resources to improve, expand, and sustain their place-based EE in K–12.

Objective a: Develop self-assessment tools related to the quality principles for place-based EE.

Objective b: Develop and disseminate written and digital products to communicate these quality principles, the varied needs and expectations of urban/suburban/rural schools, and the union of these in real and varied models of place-based EE.

The EPA's definition of EE emphasizes the cultivation of skills of issue analysis, problem-solving, and decision-making; the use of objective and scientifically sound information in teaching and learning; and the overall goals of empowering people to make informed decisions and exhibit responsible environmental behaviors. Both the GLSI's work to date and our proposed project are fully compatible with the EPA's definition of EE.

The EPA educational priorities served by this project are Capacity Building (#1), Educational Advancement (#2), and Community Projects (#3). The EPA environmental priorities addressed are Making a Visible Difference in Communities (#3), Water Quality (#4), and Partnerships (#5).

(iii) Implementation and Delivery Method: We will engage 9 to 12 local teams (teachers and community partners, with support from school administrators) in the areas served by the GLSI hubs. These teams will work with students to field place-based EE efforts in communities. Subawards to teams (not to exceed \$5,000) will support: a) these local place-based EE efforts; b) stipends for a total of 9 team members across the EPA project, who will collaborate with GLSI staff (central and hub-based) to develop quality principles and related rubrics/planning tools for place-based EE; and c) participation by one person from each team in the GLSI's 2015 Great Lakes Place-based Education Conference (which convenes a large community of place-based EE practitioners and builds momentum for place-based EE in the region) for the purpose of presenting each team's place-based EE effort to a broader audience. The project will involve 20 to 25 staff members from the nine GLSI hubs, who will recruit and support local subawardees and contribute to the grant's written products, including, quality principles of place-based EE and related rubrics/planning tools, a white paper on the benefits of place-based EE, and case studies that demonstrate how place-based EE adapts to diverse settings. We will engage a panel of up to six external experts to review our quality principles of place-based EE. We will engage at least 1,500 place-based EE practitioners beyond the GLSI by disseminating excellent written and digital products of our project through the GLSI's central/hub websites, our partners' networks, and the GLSI's annual Great Lakes Place-based Education Conferences.

(iv) Audience: The audience for subawards to enact and document local place-based EE efforts consists of 9 to 12 teams of teachers and community partners, along with associated students in urban, suburban, and rural settings and in elementary, middle, and high schools, and their building and district administration. Highly diverse communities, including low-income, minority, and tribal populations, will be included in this matrix. We expect approximately 30 teachers and a minimum of 750 students to participate in this aspect of the project. The two primary audiences for our written products are: 1) 25 to 27 staff members of the GLSI central and hub organizations, who need and will use these materials as they work with teachers, partners, administrators, funders, and students each year; and 2) a much larger population of EE practitioners, who work in or with K–12 schools in the Great Lakes region (estimated

at 1,500 educators, based on attendance at our annual place-based education conferences and our current distribution list of partners and stakeholders).

- (v) **Costs:** The EPA portion of our budget covers: a) subawards of up to \$5,000 to each of the 9 to 12 teams to offset the costs of place-based EE efforts with students, to compensate one team member per hub for contributing to the project's written products, and to support attendance and presentations by one person per team at the GLSI's annual Place-based Education Conference; b) compensation to GLSI central and hub staffs to recruit and support teams, co-design and co-author the project's written products, and administer and evaluate the project; and c) modest direct expenses for travel associated with meetings.

b) Project Description

(i) What

Place-based Models for K–12 Stewardship Education will directly address three EPA **educational priorities**:

Educational Advancement (#1) and Capacity-building (#2): In this project, GLSI staffers will work with selected teachers to develop a suite of written and digital products focused on the practice of place-based EE. We will define a set of quality principles for place-based EE in the GLSI context, and develop related rubrics and planning tools for educators to advance rigorous teaching and learning across grade levels. We also will collaboratively develop a white paper outlining the educational, community, and environmental benefits of place-based EE, including an analysis of the differing priorities and emphases of place-based EE in urban, suburban, and rural settings. Finally, we will develop 9 multimedia case studies that illustrate the diverse place-based EE efforts supported by this project; demonstrate the role that hubs play in supporting those efforts; and explore the different goals and expectations for place-based EE in schools and communities in urban, suburban, and rural settings. These products and the collaborative process used to create them will build the capacity of the GLSI, its hubs, and their network of participating schools and organizations to improve, expand, and sustain rigorous place-based EE programs in Michigan, and to better articulate to others how place-based EE can help schools and districts advance toward rigorous educational goals.

Community Projects (#3): The Great Lakes Stewardship Initiative focuses on nurturing environmental stewardship that is rooted in K–12 schools, but involves outdoor, place-based, experiential, community-focused stewardship efforts as a primary strategy. Place-based EE has been one of three key strategies and defining features of the GLSI since its launch in 2007. This emphasis translates to impressive levels of involvement, engagement, and impact—both by and in the community: to date, our hubs have supported hundreds of community-based stewardship efforts and formally engaged hundreds of community partners in those efforts. The GLSI has a wealth of experience in connecting schools and communities and fielding stewardship efforts that address local needs.

Place-based Models for K–12 Stewardship Education will directly address three EPA **environmental priorities**:

Protecting Water (#4): The GLSI was created to foster local stewardship of the Great Lakes and other environmental assets of the Great Lakes region. Many of the place-based EE projects or efforts supported by the GLSI in the past five years have focused on protecting water. We anticipate that water issues will continue to be a focus of this project. The GLSI has strong ties to scientists, academics, federal agencies, and nonprofits in the Great Lakes community, both through the Great Lakes Fishery Trust and through the hubs' host institutions and local partnerships. GLSI hubs work directly with schools in the coastal communities of Lakes Superior, Michigan, and Huron. In addition, many of our inland schools study water quality or water conservation issues by fielding place-based EE efforts in streams, rivers, and wetlands. Three GLSI hubs have received Great Lakes B-WET grants, which emphasize water stewardship and Great Lakes literacy.

Making a Difference in Communities (#3) and Launching New Partnerships (#5) are well served by our project and the GLSI, generally. The EPA's commitment to "protect the environment one community at a time"¹ and to be responsive to the unique environmental issues of each community is wholly compatible with the GLSI's emphasis on place-based EE, in which the focus for learning is drawn from the community. Similarly, the EPA's interest in generating "a new era of partnerships" also is wholly compatible with the GLSI's networked structure, in which cross-hub conversations are building knowledge and relationships, and the GLSI's emphasis on school-community partnerships, one of three core strategies that all GLSI hubs practice. It is through partnerships with the community

¹ <http://www2.epa.gov/aboutepa/epas-themes-meeting-challenge-ahead#communities>

that schools gain access to the pragmatic, current-day knowledge of local experts and use this as an integral part of students' education; it is through partnerships with schools that the community introduces, instructs, and engages its young people in critical issues and unleashes their capacity to be genuine contributors. Students served by the GLSI through its hubs are exposed to many collaborating organizations in their communities—organizations that open their work to the students and involve them in it. We can think of no better way to prepare future stewards than by exposing them to environmental issues in their communities, introducing them to people at work on those issues, and creating authentic opportunities for them to learn, reflect, and contribute.

Goals: The goals for “*Place-based Models for K–12 Stewardship Education*” are:

- to support and demonstrate high-quality place-based EE that responds to different needs in diverse contexts;
- 1. to create new understanding of high-quality place-based EE in highly diverse contexts; and
- 2. to arm the GLSI's network and the broader EE community with needed resources to improve, expand, and sustain their place-based EE efforts.

Our vision of this project as a model highlights two aspects of the proposed work. First, this project models best practices “on the ground.” It will organize knowledge and generate products that can help educators and those who support them integrate place-based EE in a variety of K–12 settings, attending to student engagement, rigorous learning, and opportunities to apply knowledge to real problems, while tailoring the methods and emphases in response to contextual needs and pressures. It will help members of the environmental community cultivate a local ethic of stewardship and develop more resilient communities.

More broadly, the GLSI, itself, is one replicable model of a structure to establish, nurture, and scale up place-based EE in a K–12 setting. As noted in our summary, the GLSI relies on three *strategies* to catalyze behavioral change related to stewardship:

- 1. Place-based education, in which the local community and environment is the starting point for teaching and learning about natural resources and stewardship; and instruction actively engages students in real-world activities and is strongly connected to student achievement, academic outcomes, and schools' curricular goals.
- 2. Sustained professional development for K–12 teachers, in which teachers are engaged over time in studies of environmental content and place-based pedagogy, according to their needs and in a collegial setting that nurtures peer relationships.
- 3. School-community partnerships, in which people in schools and communities undertake mutually meaningful and productive work that addresses local stewardship needs, students are viewed as valuable assets in the community, and community organizations are viewed as prized contributors to the education of youth.

The GLSI's *structure* consists of nine regional hubs that provide support and leadership for the collaborative work of students, teachers, schools, and communities; and a small, centralized GLSI staff that builds awareness of the GLSI and strives to establish and sustain the initiative's work in schools and communities in Michigan, the Great Lakes, and beyond. In this way, over time, place-based EE—and the stewardship behaviors it inspires in learners—become ingrained in the culture of both schools and communities.

The GLSI in general, and this project specifically, supports stewardship behaviors and long-term environmental health by providing youth with powerful learning experiences that are intentionally designed to cover the necessary ground for stewardship: values, behaviors, knowledge of ecology, knowledge of civic processes, action competence, and connection to the students' own world through reliance on local natural resources and people of the community. The place-based EE efforts supported via this project's subawards will build stewardship directly, while the written materials from the grant will expand the capacity of the GLSI hubs to facilitate meaningful stewardship education in schools and communities in nine Michigan regions—and beyond—for many years to come.

(ii) Why

There is increasing evidence that rigorous EE yields academic benefits (Ernst 2012). By “rigorous EE,” we mean what Ernst calls “school-based EE,” which includes place-based EE, environmental service learning, and other models that feature and emphasize “interdisciplinary, learner-centered instruction, the development of critical thinking and problem solving skills,” “consideration of the environment in its totality,” “focus on issue and action skill development in a community participation framework,” and “duration” (2012, 73–74).

Studies have linked rigorous EE with student growth in core subject areas (Bartosh, et al. 2005; Cheak, Volk, & Hungerford 2002; Ernst 2005; Glenn 2000; Lieberman & Hoody 1998). Rigorous EE also has been associated with

growth in critical thinking abilities (Cheak, Volk, & Hungerford 2002; Ernst & Monroe 2004), and achievement motivation and engagement in learning (Athman & Monroe 2004; Bartosh 2003; Powers 2004). Rigorous EE has furthermore been associated with 21st century skills and positive youth development outcomes, including cooperation and teamwork, social-emotional skills, problem-solving, responsibility, communication, and leadership (Lieberman & Hoody 1998; Glenn 2000; Glenn 2001; Robinson & Zajicek 2005). Numerous leading EE publications, including the *Excellence in Environmental Education* series of the North American Association for Environmental Education, agree that the practices entailed in these rigorous EE models also are best practices for the achievement of environmental literacy and stewardship aims (Simmons 1996/2004; NAAEE 1999/2010; Coyle 2005).

In launching the GLSI in 2007, and for all the reasons noted above, the GLFT purposefully chose place-based education as the organizing principle for its investment in stewardship education. The GLFT also was mindful of barriers: despite the impressive array of benefits associated with place-based EE, we know that the practice generally remains both rare and/or ephemeral in K–12 schools across the United States. In fact, one could argue that environmental education, in general, has a limited presence in today’s K–12 schools. The environment is not a core subject, and environmental learning is not managed with scope-and-sequence documents that would allow for depth of coverage and expectations of year-to-year progress (Coyle 2005). Barriers to the use of place-based EE include: inadequate planning time for teachers to accomplish real-world projects; lack of teachers’ and administrators’ understanding of (and experience with) place-based teaching; lack of environmental literacy among teachers; concerns related to student safety; the perception that place-based EE siphons off time needed to meet state-mandated curriculum requirements; and a lack of funding and transportation for off-campus work (Ernst 2007; Ernst 2012; Bartosh 2003). In many contexts, these issues prevent any use of place-based EE; in contexts with some take-up, these issues threaten depth of work and depth and persistence of commitment.

The GLSI’s structure takes the form it does because we wish to provide access to place-based EE in K–12, but to do so in a manner that allows for creativity and innovation in methods for scaling up and sustaining the practice. The GLSI’s regional hubs have enjoyed wide latitude to translate the basic requirements and framework of the GLSI to their local contexts. This flexibility is intended to ensure the support provided by hubs can be meaningful and responsive to the distinct local communities they serve—that this support reflects both the internal cultures and barriers of local schools, the nature and extent of local stewardship needs, and the community’s assets. Through years of designing and facilitating responsive professional development, brokering partnerships between schools and communities, and supporting teams of K–12 and community educators who actively use place-based EE with students, GLSI hubs have learned a great deal about the concerns and desires of their participating schools, and how to assemble a set of services that speaks to local needs. At this point in the GLSI’s development, it is critical that we process this learning—crystallizing it for our own future benefit and use and for the field as a whole. We are ready to adopt challenging and explicit standards that define quality principles and to create a progression of practices that lays out a path to quality implementation of place-based EE. The standards and the progression can be translated into the distinct local contexts in which we work and then be used to consistently drive our work towards the strong educational and environmental benefits that are possible—and must be demonstrated—in order to establish and sustain rigorous EE programs in K–12 schools.

There are guidebooks and papers that explain what place-based education is and generally describe how to do it. There are publications that list quality principles for the fields of EE, service-learning, and more. These documents represent a vital starting point for our network and have had a strong influence on our work, but place-based EE represents a marriage of pedagogy and content whose standards and practices have yet to be fully integrated. We hope to build on the foundations of published literature in order to accomplish this integration—to specify quality principles for place-based EE and to create related rubrics and planning tools that attend to and measure the specific implementation features of a place-based EE effort and its standing on various dimensions of quality, understanding that K–12 education and the EE community bring different perspectives to the discussion of what constitutes quality in an EE effort. These tools will be mindful of the real differences in the environmental cultures, environmental issues, and educational realities of urban, suburban, and rural sites. Further, they will be mindful of changes afoot in K–12 education—the Common Core standards, the Next Generation Science Standards, the emergence of computer-based standardized assessments developed with federal support, and new systems to evaluate and compensate teachers.

We think the GLSI’s extensive experience in a variety of settings over the past six years represents an asset ready to be tapped, and one that can make a significant contribution to the field. Simply put, whether it’s expanding the conversation to diverse audiences, making a difference in communities, preserving and protecting water and other

natural resources, building a capacity and will for the work, or helping schools and communities improve together, we think we have something important to say—and we want to share it with others. GLSI hubs are working in schools ranging from urban Detroit to the rural Keweenaw Peninsula. The schools served include numerous low-income schools and schools with substantial and varied minority populations. Our hubs, and the teams of teachers working with them, have established partnerships with leading community organizations in their regions, and in this way have involved local units of government, tribal entities, environmental nonprofits, cultural nonprofits, area businesses, offices and programs of the federal government, and community foundations in their work. Because the GLSI's strategies emphasize partnerships and communities, our work with students in schools ends up opening doors to the adults who shape those schools and the communities in which they are situated.

The EPA educational priorities we will address—community-based projects, capacity building, and educational advancement—were chosen because they are central to our established ways of working with schools and also are aligned with our longer-term vision for the GLSI. The environmental priorities we will emphasize have the greatest connection to K–12 content standards and also (in the case of #5, Launching New Partnerships) align with our ongoing practices. By focusing on these EPA goals, which reflect our historical approach, base of experience, current needs, and contextual realities, we maximize our potential to make a meaningful and far-reaching contribution to the goal of establishing and sustaining place-based EE in diverse K–12 settings.

(iii) How

Project Work Plan: Our work plan runs from July 1, 2014, through June 30, 2016, and includes four distinct parts (A–D), some of which overlap in time. In part A (July 1, 2014, through June 2015), we will support 9 to 12 local teams, via subawards from this project. These teams will enact local place-based EE efforts with their students in the 2014–2015 school year. The selection process for subawardees will guarantee the involvement of at least one urban, one suburban, and one rural school at each educational level (elementary school, middle school, and high school). To the greatest degree possible, the teams will be distributed equally across the nine GLSI hubs.

Working with their hubs, the teams will develop and submit proposals for subawards. Proposals will describe what students will do and when; the learning goals for the work; the community and environmental goals for the work (mapped onto EPA environmental priorities #3 and #4); the partners involved; and the budget. Allowable subaward expenses include: costs of place-based EE efforts with students; stipends for one team member from each hub to contribute to the written products of our project; and support for one person from each team to attend the GLSI's 2015 Great Lakes Place-based Education Conference. These proposals, once approved, will be the basis for subawards not to exceed \$5,000 to total exactly 25 percent of the EPA funds for the project. (Budget requests will be reduced for the lowest-rated proposals sufficient to award exactly 25 percent of EPA funds in subawards.) In each site that receives a subaward, we will implement pre/post evaluation measures for participating teachers and students, relying on the existing GLSI-wide toolkit for the relevant educational level (elementary, middle, and high school). (For more information about the GLSI's existing evaluation instruments, see Section C

Recruitment for part A begins in summer 2014. GLSI hubs have well-established relationships with participating schools and teacher teams within those schools, as well as proven processes for helping teacher teams develop solid proposals. As a result, we expect a seamless launch for this project; our schedule can be adapted if award timelines are different than anticipated in our timeline.

As teachers, partners, and students initiate their place-based EE efforts under part A, the GLSI central and hub staffs will assemble to begin the collaborative, generative work of part B. In part B (November 2014 to June 2015), we will begin to identify quality principles for place-based EE in the GLSI's context and related assessment rubrics and project-planning tools. We will compile existing resources, including best practices identified by NAAEE for EE (Simmons 1996/2004, NAAEE 1999/2010), research-based practices for academic service-learning (Billig 2007), rubrics developed by place-based education scholars and organizations (e.g., Center for Sustainable Resources, the Rural School and Community Trust, and the Bay Area School Reform Collaborative), and rubrics and standards now used by GLSI hubs. After a series of discussions involving the GLSI's central staff and the GLSI hubs' staffs, draft quality principles and a related rubric demonstrating those principles in action will be shared with a panel of national experts for feedback and comment. Later in part B, the GLSI's central staff and the GLSI hubs' staffs will collaboratively draft a white paper on the educational, community, and environmental benefits of place-based EE, with the primary effort here being to call out the varied benefits and expectations in the urban, rural, and suburban contexts. These draft products will be finalized in part D (described below).

In part C (July 2015–December 2015), we will develop multimedia case studies for 9 of the 9 to 12 place-based EE efforts funded through subawards under part A. These case studies will highlight the specific activities of schools, teachers, partners, hub staffers, and students; the environmental and educational benefits of the work; the stewardship connections and outcomes; the particular K–12 goals and expectations for the work (including related Common Core, state, and other standards); the forms of hub support needed and received; and the ways in which the particular place-based EE effort speaks to one or more of the quality principles identified under part B. Hub staffers will play an important role in eliciting descriptive information from the teachers and partners about the specific activities and experiences, while the GLSI central staff will facilitate the development of a common format, compile evaluation data, coordinate the writing effort, and provide editing and layout services.

In part D (January 2016–June 2016), we will reconsider our quality principles and related rubrics and planning tools, our white paper, and our case studies; and enlist the help of one teacher or partner per case study in the process of reconciling and improving these products. We will launch this aspect of the work with a face-to-face meeting in January 2016.

Subsequent collaborative work involving these same parties during part D (and most collaborative work during parts B and C) will rely upon online collaboration technology (e.g., Huddle, Basecamp, Google Docs, Skype, Google Hangouts, WebEx, Evernote). At the end of part D, we will distribute the final products in a variety of ways to a variety of audiences: to EE practitioners through the GLSI’s/hubs’ websites and our partners’ networks; to local and state education leaders through meetings with the Michigan Department of Education (MDE) and presentations at the conferences of the Michigan Science Teachers’ Association and Michigan’s two professional associations of school administrators; to selected Great Lakes and national environment and education funders by using the GLFT’s position as a Great Lakes funder and an active member of the Environmental Grantmakers Association to convene learning opportunities for foundation staff; and to key regional and national EE organizations through targeted communication and presentations at their conferences.

Encouraging Behavioral Change. This project encourages behavioral change through the core mechanism of quality place-based EE. Place-based EE fosters critical thinking, decision-making, and problem-solving skills by connecting content to real-world, local, accessible issues, and prompts learners to consider the importance of the environment to community life and well-being. Hubs monitor the work of schools, teachers, partners, and students as part of their ongoing commitment within the GLSI to establish, support, and work towards the sustainability of viable, mission-aligned, place-based stewardship education in K–12.

Serving as a Model. Our project will advance and strengthen the field by enhancing understanding of how to establish, support, and sustain locally relevant, place-based EE in diverse K–12 contexts, including low-income and minority settings. The products we create and disseminate will ensure this understanding will be extended well beyond the participants in the GLSI.

Subaward Program. The GLSI has proven processes for subawarding funds. Our hubs have made more than 90 subawards to more than 300 teachers (either individuals or in teams) in each of the last three completed school years, with annual totals exhibiting a trend of modest increase. Already embedded in the subaward processes are requirements that place-based EE efforts address local stewardship needs, connect to school curricular requirements, and include an appropriate budget; also embedded are oversight and support mechanisms for this work. The applicant schools are eligible entities under the terms of this proposal. A portion of subaward funds will compensate selected team members for time spent contributing to the products of this grant; a portion of the subawards will fund the hard costs of community-based stewardship efforts, including transportation and materials. Because of existing, established processes, and the presence of a robust field from which to select participants in this project, we can guarantee that *exactly 25 percent* of EPA funds will be subawarded to eligible recipients for appropriate work aligned with one or more EPA priorities.

(iv) Who

Target Audience and Numbers. For part A (subawards for place-based EE), we will target 9 to 12 teams of educators in diverse communities, distributed across elementary, middle, and high schools. We anticipate an average of two to three teachers per team, for an approximate total of 30 teacher participants. We estimate that each teacher will involve at least 25 students, for a minimum expectation of 750 student participants. (Middle-school teachers often involve multiple sections or class periods of students in stewardship efforts.) Twenty-five to 27 GLSI staffers will take part, most of whom work in regional hubs. For the products of parts B–D, our intended audience is the

broader EE community, to include at least 1,500 environmental practitioners and organizational leaders in the Great Lakes region and beyond.

Recruitment Plan: Subawardees will be recruited by the GLSI's regional hubs. Hubs have routinely performed this function annually since their inception. Most hubs cultivate long-term relationships with a set of participating schools and provide long-term support to not only initiate place-based EE, but also move the school towards a sustained commitment to it. Teachers who participate in the GLSI can attend hub-supported professional development, access coaching and mentoring from hub staffers and/or a peer network, and seek funding for place-based stewardship efforts with students. In this project, professional development costs will be met via match rather than with EPA funding.

Expanding the Conversation. GLSI hubs are working in schools ranging from urban Detroit and Flint to the rural Keweenaw Peninsula. Michigan's settlement patterns exhibit substantial racial segregation, with many Detroit and Flint schools serving student bodies that are almost 100 percent African American. Upper Peninsula schools working with the GLSI include several with substantial Native American populations. More than 37 percent of schools participating in the GLSI in 2012–2013 reported student eligibility for free (not simply reduced-price) lunch of 50 percent or greater. GLSI hubs, and the teachers working with them, have established partnerships with leading community organizations in their respective regions, and in this manner have involved local units of government, tribal entities, environmental nonprofits, cultural nonprofits, area businesses, offices and programs of the federal government, and community foundations in their work. These partners typically reflect their communities and have a deep knowledge of and commitment to the specific places and local cultures served.

(v) Subaward Program

The subaward program is described under “iii. How” (page 7).

c. Project Evaluation

The GLSI has developed a set of three toolkits for evaluation of the impacts of place-based EE on students: one for elementary, one for middle school, and one for high school. The toolkits include a pre/post student survey with scales focused on age-appropriate dimensions of stewardship: environmental sensitivity (all), environmental attitudes (all), responsible environmental behaviors (all), civic capacity (middle and high school), and future intentions (high school). Each toolkit also includes at least two “embedded assessments” or worksheets capturing students' thinking in their own words regarding the stewardship issue being explored in their classroom, with teachers asked to choose and field one of these assessments. A pre/post test of Great Lakes knowledge is available at the middle and high school levels, and a similarly structured test of more general ecological knowledge will be piloted in the 2013–2014 school year on a limited scale. A career survey is available for high school students, as is a parent survey particularly suitable for students at the third-grade level and below (from whom we do not collect self-report survey data). Each of these tools has been piloted and revised in the past two years. Surveys were developed to the extent possible using previously validated items and scales from the published literature.

We will use these toolkits to capture pre/post student data from 9 to 12 subawardees in order to evaluate changes in knowledge, thinking (about environmental and stewardship themes), and other environmental literacy and stewardship constructs, including sensitivity, attitudes, responsible behaviors, civic capacity, and future intent—a set of domains selected with consideration of those used in the National Environmental Literacy Assessment (McBeth & Volk 2009; McBeth et al., 2011). As part of constructing robust multimedia case studies for 10 of these place-based EE efforts, we will document the environmental and community benefits of the place-based EE efforts funded by the grant. We expect the written products of the grant, and the process of generating them, to result in knowledge and behavior outcomes for GLSI staff and teachers. The quality principles should influence the subsequent work of GLSI central and regional staffs and participating teachers: specifically, we anticipate that hubs will take steps to embed the quality principles and related tools into their professional development frameworks, and that lead teachers will be able to identify adjustments they made to place-based EE efforts that were based on what they learned, while contributing to our quality principles for place-based EE. These outcomes will be assessed via semi-structured interviews. Longer-term outcomes beyond the scope of the project timeline will emerge and be evaluated as the GLSI moves forward. We will report all evaluation results to the EPA.

(4) DETAILED BUDGET

Budget Table

Category	Notes	EPA Funds	Non-EPA Funds	Total
Personnel/salaries	The GLFT works with a contracted staff and has no employees. See budget narrative for additional information.	\$0	\$0	\$0.00
Fringe benefits	Not applicable	\$0	\$0	\$0.00
Travel	EPA funds support travel costs (mileage, lodging) for one face-to-face meeting. Matching funds support travel costs for a second face-to-face meeting and conference presentations by the GLSI staff.	\$4,950	\$5,788	\$10,738.00
Equipment over \$5K	None	\$0	\$0	\$0.00
Supplies	Matching funds provide office supplies for two face-to-face meetings.	\$0	\$100	\$100.00
Contract costs	Staffing costs are \$231,093, of which \$102,700 is requested from the EPA to support staff costs for subawardee selection and oversight; producing collaborative written and digital products defining quality standards, describing academic/environmental benefits of place-based EE, and creating multimedia case studies; and grant management and administration. \$128,393 is supplied as match, including in-kind professional development services estimated at \$8,568 and \$119,825 of additional staff time arrayed across the various activities of the grant. Contract costs for an expert review panel are \$3,000 (EPA). Subawards are \$37,500 (EPA).	\$143,200	\$128,393	\$271,593.00
Other costs	EPA funds support long-distance telephone and collaboration software and venues for two face-to-face meetings. Matching funds provide meals for two face-to-face meetings.	\$1,850	\$1,280	\$3,130.00
Indirect costs	Not applicable	\$0	\$0	\$0.00
Totals		\$150,000.00	\$135,561.00	\$285,561.00

Budget Narrative

Personnel: The GLFT employs no permanent staff and has no physical office. In 1996, the GLFT initiated operations and conducted a competitive process to select a contractor to provide staff support to the board and manage all of the GLFT's programs and operations. Public Sector Consultants Inc. (PSC) was selected, and continues to serve the GLFT in this capacity. PSC's contract is annually reviewed and renewed, and PSC subcontracts with other organizations or individuals to secure additional expertise as needed. The ongoing operations of the GLSI are staffed via contract in this manner; these costs are represented under the "contractual" section of the budget.

Fringe Benefits: Not applicable.

Travel: The budget includes two face-to-face meetings. Travel costs for the first meeting (January 2015) will be funded by the GLFT, as match, and will involve approximately 27 staff members from throughout the GLSI. The face-to-face meeting will occur at a destination to be identified that is roughly central for the various travelers. We estimate 15 cars averaging 250 miles round trip at \$0.56 per mile for \$2,100 in mileage, and overnight lodging for 18 individuals (we estimate nine will not require overnight accommodations) at \$86.00 per night for \$1,548.00 in lodging. The total match is \$3,648.

GLFT requests \$4,950 from EPA for travel associated with a second face-to-face meeting (January 2016), which will involve approximately 27 staff members and 10 teachers or partners in place-based EE teams. The face-to-face meeting will occur at a destination to be identified that is roughly central for the various travelers. We estimate 20 cars averaging 250 miles round trip at \$0.56 per mile for \$2,800 in mileage, and overnight lodging for 25 individuals (we estimate 12 will not require overnight accommodations) at \$86.00 per night for \$2,150.00 in lodging.

Additionally, the GLFT will provide matching funds to support presentation of the informational products of the grants. We have budgeted for eight conference presentations or information meetings with audiences including the Michigan Department of Education, the Michigan Science Teachers Association, the Michigan Association of Secondary School Principals, the Michigan Association of School Administrators, foundations investing in Great Lakes education and environmental issues, and key national organizations for environmental education. Our budget anticipates two national presentations, including round-trip flights (2 @ \$500), lodging (2 @ \$100), conference registration fees (2 @ \$100), and meals/incidentals (2 @ \$43) for a total of \$1,486.00. Remaining presentations are budgeted as Michigan/regional presentations, with costs including mileage (150 miles @ \$0.56/mile) and registration fees for conferences (\$25 per meeting) for a total of \$654.00.

Equipment: Not applicable.

Supplies: The GLFT will provide, as match, office supplies of approximately \$100.00, e.g., flip charts and markers, name tags, printed meeting materials, etc.

Contractual: Contractual costs include budget for staff (central and regional hubs), expert review panel, and subawards of \$5,000 or less, as follows:

Staff: Central staff costs are budgeted at \$122,325. Costs represent seven days for general administration of the project, 113.125 days to coordinate the project and develop written and digital products, and 33.5 days for support services, including scheduling, editing, and document development; this budget also reflects an evaluation budget of \$20,250, of which \$500 is estimated as direct expenses for printing, postage, local mileage, and telephone (the remainder is personnel time). The rates charged for contract staff reflect the current rates and terms negotiated between PSC (including subcontractor Mary Whitmore) and the Great Lakes Fishery Trust for operation and management of the Great Lakes Stewardship Initiative. Of these totals, the GLFT will provide \$88,625 as matching funds for the grant; \$33,700 is requested from the EPA.

Regional hub staff costs are budgeted at \$108,768. The staffs of each hub will contribute approximately 7.5 days for participation in work groups and meetings and generating and reviewing content for parts B–D of the proposal; approximately 5.75 days overseeing and documenting the work of subawardees in their service areas to be featured in case studies; and approximately two days overseeing the work of subawardees in their service areas *not* featured in case studies, for a total of 125.25 days (7.5 days * 9 hubs = 67.5 days on parts B–D; 9 case studies * 5.75 days = 51.75 days; and an estimated three additional subawards * 2 days = 6 days on part A). Of this total, we request EPA funding of \$69,000, representing 86.25 days, and will contribute 39 days, or \$31,200, as match. Contracts with hubs will include salary, fringe, and indirect cost components as applicable to each hub organization.

In addition, subawardees will have access to the ongoing professional development programs of the hubs. GLSI regional hubs field a sustained program of professional development for participating teachers (and community partners). In the 2012–2013 school year—the last for which complete data are in hand—GLSI regional hubs hosted (or supported teachers’ access to) a combined 184 workshops or other events, which lasted 955 hours, and yielded more than 8,600 hours of combined service to individual learners. On average, teachers engaged with a regional GLSI hub have access to 23 events per year, made up of a mix of intensive multiday summer workshops, daylong events during the school year, and shorter coaching sessions or evening “dinner and dialogue” meetings. Hubs budgeted an average of 0.25 FTE (500 hours) for the year strictly for staff time in support of professional development. The per-teacher cost for the full school year, on average, was \$238, *considering only that portion of the staffing budget and direct expenses* paid by the GLFT. On this basis, we estimate that teachers participating in the grant via subawards will receive professional development that can be valued at \$8,568, representing only the documented GLFT contribution to the cost of this service, and exclusive of the considerable match supplied by GLSI hubs toward the total cost of their professional development programs. This amount is included in our total budget as GLFT match.

Expert review panel: \$3,000 is requested from the EPA to provide \$500 stipends to six experts who will review the draft quality principles and provide feedback.

Subawards of \$5,000 or less: Subawardee costs are \$37,500, 25 percent of the EPA funding request. Subawards to schools will be in amounts not to exceed \$5,000 for eligible costs, including material and transportation costs related to place-based EE efforts; registration and travel costs for the November 2015 PBE conference for one teacher or community partner per team; and, in association with nine subawardees, \$1,000 for one lead teacher as compensation for time spent contributing to the written products of the grant.

Other: Our budget requests funding from the EPA in the amounts of \$650 for telephone costs, \$600 for meeting venues, and \$600 for collaboration software/services. Food for two face-to-face meetings totals \$1,280 and will be provided as match by the GLFT.

Indirect Costs: No indirect is charged.

Income: No income will be earned.

Note: Matching funds calculated for this grant do not include the significant investments of GLSI regional hubs into the ongoing GLSI programs in their regions. The broader programs of the GLSI provide a professional network for the subawardees funded via this grant—a network of peers and community representatives engaged in place-based EE. The ongoing broader programs of work provide significant additional context for the exploration of the important themes of parts B–D (written products on quality and benefits) of the work of this grant. For the 24-month period beginning July 2013 and ending June 2015, the GLFT regional hubs secured matching commitments of \$1.13 million, including in-kind salary match from host institutions and cash grants secured from other funders, to help fund their ongoing programs of sustained professional development, place-based EE, and school-community partnerships.

(5) APPENDICES

APPENDIX A: TIMELINE

Timeline	Key: ○ = activity, ● = milestone, ✕ = evaluation activity																							
	July 2014	Aug 2014	Sept 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	March 2015	April 2015	May 2015	June 2015	July 2015	Aug 2015	Sept 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	March 2016	April 2016	May 2016	June 2016
Part A: Place-based EE Efforts																								
A1. Staffers review project work plan; outline roles/responsibilities for all participants; update applications for subawards; choose collaborative technology to support virtual meetings and ongoing communication about project	○																							
A2. Kickoff meeting (virtual) of central and hub staffs		○																						
A3. Hubs crosswalk their existing subaward/proposal templates to this grant's subaward requirements		○	○																					
A4. Hubs recruit local teams		○	○	○	○	○																		
A4. GLSI receives and reviews proposals from teams, through hubs		○	○	○	○	○																		
A5. Subawards to teams approved				○	○	●																		
A5. Evaluator collects pre-experience data from students/teachers prior to fielding of place-based EE efforts				✕	✕	✕	✕																	
A6. Teams' place-based EE efforts occur				○	○	○	○	○	○	○	○	○												
A7. Hub staffers support, monitor, and document subawardees' place-based EE efforts				○	○	○	○	○	○	○	○	○												
A8. Post-experience project evaluation data collection											✕	✕												

Timeline	Key: ○ = activity, ● = milestone, ✕ = evaluation activity																							
	July 2014	Aug 2014	Sept 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	March 2015	April 2015	May 2015	June 2015	July 2015	Aug 2015	Sept 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	March 2016	April 2016	May 2016	June 2016
Part B: Collaborative development of quality principles, related materials, and white paper																								
B1. Central staffers review and compile literature; solicit from hubs any recommended materials and tools in use				○																				
B2. Central staffers compile preliminary list of quality principles for PBE; distribute to hub staffs					○																			
B3. Survey of hub staffs for initial ranking of each preliminary principle's applicability in practice					○	○																		
B4. Convene face-to-face meeting to share progress and discuss principles of place-based EE (hub staffs + central staff)						●																		
B5. Follow-up meetings (remote) to discuss quality principles and refine list							○	○																
B6. Develop draft quality principles for place-based EE; coordinator distributes to experts for review									○	○														
B7. Coordinator receives comments from expert panel												●												
B8. Coordinator distributes experts' comments to hub staffs; virtual meetings to discuss; update draft												○	○	○										
B9: Achieve initial consensus on content/design of quality principles for place-based EE document														●										
B9: Central staffers create first draft of white paper, including a list of place-based EE benefits (educational, community, environmental)										○	○													

Timeline	Key: ○ = activity, ● = milestone, ✕ = evaluation activity																							
	July 2014	Aug 2014	Sept 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	March 2015	April 2015	May 2015	June 2015	July 2015	Aug 2015	Sept 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	March 2016	April 2016	May 2016	June 2016
B10: Collect hubs' input on benefits list; solicit hubs' insights/evidence of specific concerns in urban/rural/suburban context (as appropriate to each hub's service areas)											○	○												
B11: Achieve initial consensus on white paper content													●											
Part C: Multimedia case studies																								
C1: Evaluator analyzes student and teacher survey data					✕	✕	✕						✕	✕	✕									
C2: Hub and GLSI central staffs identify the 9 sites for case studies (of the 9 to 12 candidate sites)										○	○	○	○											
C3: Develop common format for the case studies													○	○	○									
C4: Hub staffs and lead teachers for case study identify crosswalks between case study and national, state, and local curricular standards														○										
C5: Identify and explore crosswalks between each study and a) potential benefits listed in white paper and b) quality principles of place-based EE														○	○									
C6: Hubs generate descriptive content/imagery/artifacts for case studies															○	○	○							
C7: Produce complete first drafts																		●						
Part D: Reconcile, Finalize, Disseminate, Administer																								
D1: Convene hub staffs and one teacher representing each case study for initial discussion																			○					
D2: Solicit feedback on strengths, weaknesses, and intersections of the written products																			○	○	○			
D3: Edit and improve products																				○	○	○	○	

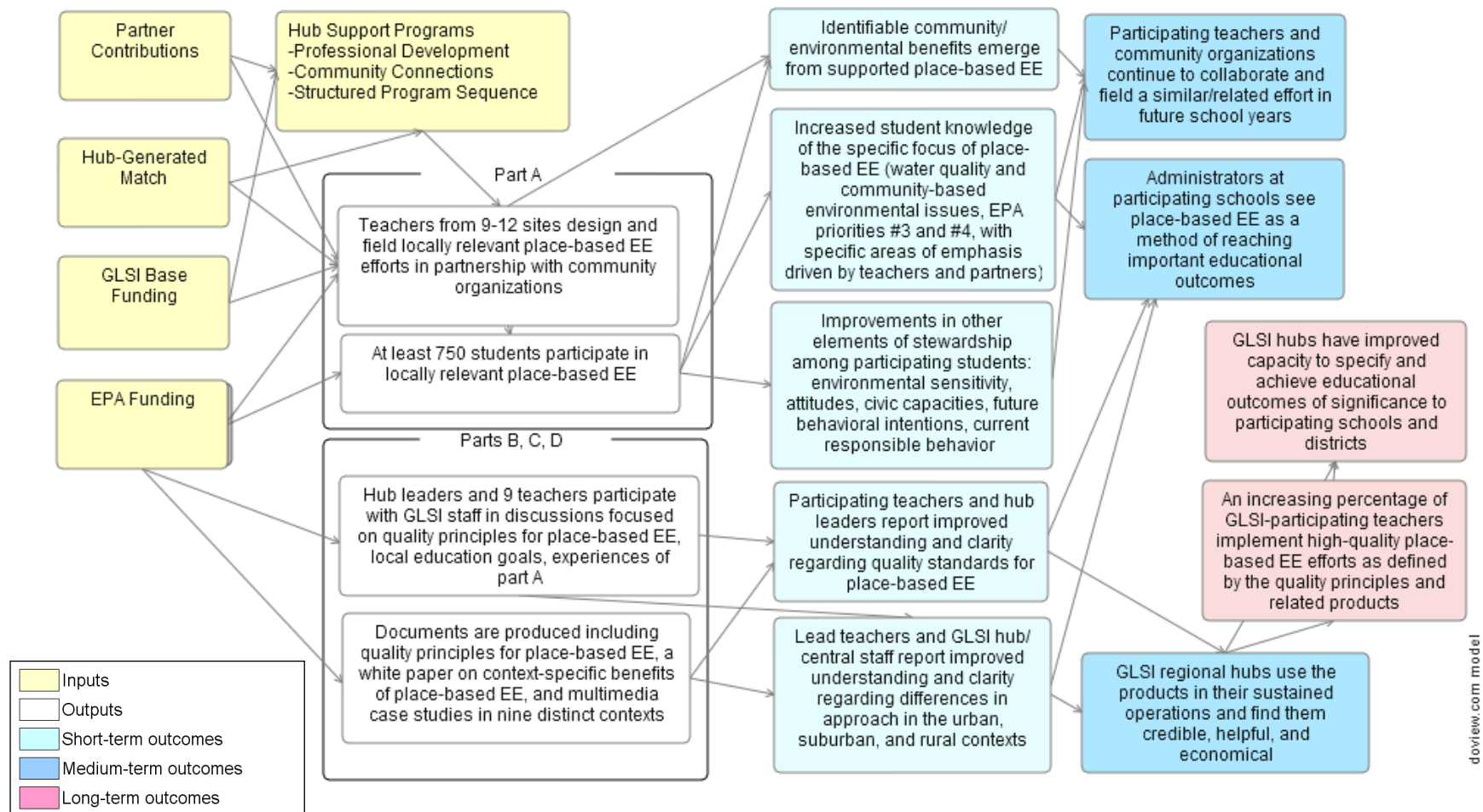
Timeline	Key: ○ = activity, ● = milestone, ✕ = evaluation activity																							
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D4: Identify specific opportunities to present nationally (2) and in-state/regionally (6); schedule these presentations (may extend beyond grant period)																				○	○	○	○	○
D4: Conduct evaluative interviews with participating team members and GLSI central/hub staffs																						✕	✕	
D5: Finalize and release products for dissemination online and through the GLSI's/hubs'/partners' networks and to key regional/national organizations			○			○			○			○			○			○			○			●
D6: Submit required reports to the EPA			○			○			○			○			○			○			○			●

Management Procedures and Controls: The Great Lakes Fishery Trust will ensure funds are expended in a timely fashion and that the work plan is implemented consistent with the proposal. The GLFT has no employees; since 1996, Public Sector Consultants Inc. (PSC) has fully supported its operations. PSC has a long history of implementing work plans (including those funded by federal grants) on time and on budget.

The GLFT is governed by a board of directors and has written internal controls, operating procedures, and procurement policies in place, along with established management structures and procedures. The GLSI coordinator will serve as project manager and oversee subcontractors to ensure that tasks and milestones are completed in a timely manner. Regular biweekly meetings with the internal team and subcontractors will be conducted to ensure effective communications. The GLFT manager will serve as the grant administrator and oversee the related accounting, financial reporting, and payment processes for the grant with assistance from GLFT accountant, Hall & Romkema, the board treasurer, and the GLFT executive assistant. Throughout the project, periodic updates to the GLFT board and calls or meetings with the EPA grant administrator (as desired) and other staffers will occur to review progress relative to program objectives.

GLFT financial records are maintained by an external accounting firm (Hall & Romkema), which was selected through a competitive RFP process issued by the GLFT. Annual financial reviews are conducted by external, third-party auditors for both Public Sector Consultants and for the GLFT, and financial audits are conducted by external, third-party auditors every three years. Each auditor conducts tests on the financial statements, transactions, and internal controls of the respective organizations, and issues the resulting report directly to the owners of PSC and the GLFT Board of Directors, respectively.

APPENDIX B: LOGIC MODEL



APPENDIX C: PROGRAMMATIC CAPABILITIES AND PAST PERFORMANCE

Place-based Models for Stewardship Education in K–12

Application to the Environmental Protection Agency 2014 Environmental Education Grant Competition

APPENDIX C: PROGRAMMATIC CAPABILITIES AND PAST PERFORMANCE

Organizational Capabilities to Conduct the Project

Staff Roles and Related Experience

GLSI Central Staff: The project's overall administration will be provided by **Julie Metty Bennett**. Metty Bennett is a senior vice president at Public Sector Consultants. She manages the firm's Environment and Energy Division, provides strategic counsel and facilitation services, conducts research and analysis, and manages projects for the firm and its clients on a wide range of subjects, including energy, water quality, solid waste management, land use, community and economic development, and natural resource management. She serves as a co-founder and manager of program design and innovation for Michigan Saves, a multimillion-dollar nonprofit organization managed by PSC that provides financing solutions for energy efficiency and renewable energy improvements. And she serves as manager of the Great Lakes Fishery Trust, a private foundation managed by PSC and the applicant for this proposal. Prior to joining PSC in 2000, Ms. Bennett worked for the Michigan United Conservation Clubs as an environmental policy specialist, and for the National Wildlife Federation, where she managed advocacy campaigns in furtherance of Great Lakes protection issues. Ms. Bennett holds a BA in Interdisciplinary Studies in Social Science and an MS in Resource Development, with specialization in Environmental Toxicology, both from Michigan State University. Ms. Bennett will administer the grant overall; administer contracts for collaborators and subawardees; contribute to reports to EPA; and manage the budget; and will be available as needed for consultation in areas of her environmental expertise.

Day-to-day project management will be the responsibility of **Dr. Mary Whitmore**, coordinator for the GLSI. Whitmore will lead efforts to generate written and digital products (quality principles, white paper, case studies), while coordinating with regional hub staff to support subawardees. Her career reflects a keen interest in scientific research, K–16 science education, youth and community development, and natural resources. As the resident ecologist at the University of Michigan, Whitmore designed, obtained funding for, and directed a successful outreach program in science and environmental education for K–12 students, teachers, and community residents. As the program grew over 10 years, Dr. Whitmore helped spearhead an effort within the Michigan Department of Education (MDE) to develop similar programs across the state. She and her colleagues created a larger structure and obtained legislative funding for what is now the Michigan Mathematics and Science Centers Network. Prior to her work with the GLSI, Dr. Whitmore also worked as a consultant/program director in science education for the W.K. Kellogg Foundation, and as co-coordinator for K–12 professional development for Michigan's Statewide Systemic Initiative, funded by the National Science Foundation. Through projects funded by the Michigan Department of Treasury, she served as a writer/editor for K–12 instructional materials in science, focusing on inquiry- and place-based instruction. She recently worked with a group of global climate change scientists at the University of Michigan to translate their work for a K–12 audience via Web-based instructional resources for middle and high school teachers and their students. Dr. Whitmore's resume is attached at the end of this section.

GLSI Regional Hub Staff: Collaborators in the GLSI's regional hubs will recruit subawardees, monitor and support the work of those teams, provide related professional development, collect descriptive project information for case studies, and participate in work groups around quality principles, the white paper, and the 10 case studies. Specific individuals who will play these roles include:

- ◆ **Lake Superior Stewardship Initiative:** **Shawn Oppliger** is the director of the Western UP Center for Mathematics, Science, and Environmental Education and has 15 years of extensive experience in leading science and mathematics professional learning and implementing student programming for schools in Houghton, Baraga, Keweenaw, Ontonagon and Gogebic counties of Michigan. Ms. Oppliger has successfully managed K–12 education grants from various funders, such as the Math and Science Partnership, the National Oceanic and Atmospheric Administration, Michigan Department of Education, the Michigan Department of Environmental Quality, the Great Lakes Stewardship Initiative, and the Wege Foundation. Ms. Oppliger has been recognized for her contribution to education through Copper Country Association of School Board (2010 Educational Leadership Award) and Michigan Technological University (2005 Educators Academy). Prior to her work as the director of the Western UP Center, Ms. Oppliger taught math and science for 13 years at the middle and high school levels. **Joan Schumaker Chadde** is an education/outreach coordinator at Michigan Technological University in Houghton, Michigan. She has more than 30 years of experience in K–12 science and environmental education. She has coordinated more than 40 teacher professional development workshops and summer teacher institutes on a wide range of STEM topics. She was co-PI on a three-year National Science

Foundation grant to develop a national program to engage elementary-aged children and their parents in learning about engineering and is co-author of *Family Engineering: An Activity & Event Planning Guide* (2011). Since 2009, she has worked closely with Detroit Public Schools implementing forest stewardship programs with Detroit teachers and students. Ms. Chadde is author of numerous educational curricula and materials, including the Michigan Environmental Education Curriculum Support (MEECS) Water Quality Unit (2006, 2012) and Design Guidelines to Enhance Community Appearance and Protect Natural Resources. She served as president of the Michigan Alliance for Environmental & Outdoor Education (2009), and served on the group's Board of Directors (2006–2013).

- ◆ ***Southeast Michigan Stewardship Coalition:*** **Dr. Ethan Lowenstein** is an associate professor of curriculum and instruction at Eastern Michigan University (EMU). Dr. Lowenstein has close to two decades of experience in school systems reform, educational leadership development, and teacher professional development in moral and civic education. In recognition of his work in teacher education, Dr. Lowenstein received the 2007 Michigan Campus Compact Faculty/Staff Community Service-Learning Award and the 2006 Dean's Award for Innovative Teaching. Before his career in higher education, Dr. Lowenstein taught high school social studies at Park East High School, an alternative high school in East Harlem, New York City. Dr. Lowenstein was the 1996 New York City Board of Education Teacher of the Year for alternative schools.
- ◆ ***Western Michigan Great Lakes Stewardship Initiative:*** **Dave Krebs**, director for the MAISD Instructional Services Department and Director of the MAISD Regional Mathematics & Science Center, has extensive experience managing regional science and math programs. In this capacity, Mr. Krebs serves as project director for the West Michigan GLSI, oversees the development and delivery of professional development programs in a four-county region, supervises 18 employees, and manages the affairs of the MAISD Regional Math/Science Center in the Michigan Math/Science Centers Network. **Sarah Coleman**, science consultant for the MAISD Regional Mathematics & Science Center, has 11 years of experience teaching secondary science and math, and has extensive training and experience in curriculum, instruction, assessment, and teacher professional development. Ms. Coleman designs and delivers the hub's professional learning program; works with school leadership teams to build capacity for institutionalizing place-based education; and provides curriculum and assessment support to participating school teams. **Erica Johnson**, project specialist for the MAISD Regional Mathematics & Science Center, has 10 years of experience teaching secondary school science. She has extensive training and experience in curriculum, instruction, and assessment, as well as in place-based education and service-learning. Ms. Johnson manages our West Michigan GLSI and the affairs of the hub in the statewide organization of GLSI hubs. Ms. Johnson also manages and supervises the hub's field coordinators, and provides support to Sara Coleman in her work with school leadership teams.
- ◆ ***The GRAND Learning Network:*** **Dr. Shari L. Dann** is associate professor and extension specialist in the Department of Community Sustainability at Michigan State University. She has 28 years of experience in environmental education for K–12, nonformal youth, and adult/teacher audiences. Her focus is on programs that foster effective, science-based stewardship in partnership with natural resource agencies and community organizations. Her current research interests center on how people develop a “sense of place” and how that place attachment relates to learners' civic engagement in critical conservation issues. She holds a PhD in Fisheries and Wildlife from MSU, and her MS and BS in Natural Resources are from Cornell University. **Mark Stephens** is an educator, Department of Community Sustainability, MSU. He has 13 years of experience as education coordinator for nonformal Great Lakes, fisheries, and aquatic resource education with MSU Extension for the GRAND Learning Network, Project FISH, 4-H Environmental and Outdoor Education, and numerous other national, state, and community-based conservation and stewardship education programs. His experience also includes work as an education staff member of the Michigan United Conservation Clubs, where he supervised the youth camp and other diverse programs. **Margaret Holtschlag** is a retired elementary teacher, with 30 years of experience. She is now serving as an environmental educator in mid-Michigan. In 2000, she was Michigan Teacher of the Year and a National Teacher of the Year finalist. She is the developer for regional professional development initiatives, including the GRAND Learning Network, Annie's BIG Nature Lesson, and the BIG Zoo Lesson. She provides coaching and professional development assistance/leadership for elementary schools in the region, and specializes in coaching teachers on meaningful stewardship projects with conservation and environmental literacy-focused community partners.
- ◆ ***Groundswell:*** **Michael Posthumus** is the assistant director of the Center for Educational Partnerships at the Grand Valley State University College of Education and the former coordinator for Groundswell. He has a

master's degree in Education Administration from Northern Michigan University and a bachelor's degree in biology from GVSU. He also studied place-based education at the Teton Science School.

- ◆ **Northeast Michigan Great Lakes Stewardship Initiative:** **Daniel Moffatt** first served the Northeast Michigan Great Lakes Stewardship Initiative as education coordinator through AmeriCorps. Today, he continues with the initiative as program coordinator facilitating this regional network and partnership, where he continues to foster school-community partner relationships that engage students in hands-on, place-based learning across northeast Michigan. **Brandon Schroeder** works with coastal communities in northeast Michigan to apply science-based knowledge to address Great Lakes issues locally. His Sea Grant Extension efforts involve fisheries science, sustainable coastal tourism development, and Great Lakes education. He serving as co-leader of the Northeast Michigan Great Lakes Stewardship Initiative, a regional place-based education network.
- ◆ **Discovering PLACE:** **Leyla Sanker**, UM-Flint University Outreach community outreach coordinator, has worked with the UM-Flint campus for more than 10 years. Ms. Sanker serves as the primary coordinator for the Discovering PLACE place-based education program, working with teachers and administrators in the greater Flint area. Project coordination, grant development and administration, partnership development, and facilitation of relationships between campus and community organizations are the primary components of her work. Ms. Sanker has a strong background in environmental planning, policy, and education. She holds a BS in Resource Planning from UM-Flint and is pursuing a master's degree in Environmental Leadership at Duke University. **Jacob Blumner** is interim director of University Outreach at UM-Flint. He helps to create and nurture partnerships between the community and the university, including interactions with community leaders, funders, and K-12 partners. Mr. Blumner serves as hub leader for Discovering PLACE, a hub of the Great Lakes Stewardship. He has a PhD from the University of Nevada and has served as professor of English at several colleges including Eastern Michigan University and Kent State University.
- ◆ **Grand Traverse Stewardship Initiative:** **Connor Miller** holds a BA in Economics and Political Science from Miami University. He originally moved to the area to serve as an AmeriCorps VISTA member through Rotary Charities of Traverse City in November 2010. Connor became the Grand Traverse Stewardship Initiative (GTSI) coordinator in fall 2013. Mr. Miller continues to work with a large number of community partners including various local government bodies, nonprofit organizations, private sector businesses, schools, and individual community members to support place-based Environmental Education (EE) programming and empower local youth to serve community-focused stewardship needs through the partnership of students, teachers, and local community partners in the Grand Traverse region.
- ◆ **Upper Great Lakes Stewardship Initiative:** **Carl Lindquist** is the executive director of the Superior Watershed Partnership, an award-winning Great Lakes nonprofit organization that serves communities in the Upper Peninsula of Michigan. The SWP service area includes portions of the Lake Superior, Lake Michigan and Lake Huron watersheds. Lindquist's 25-year career includes practical field experience supervising large scale

environmental restoration projects (Wisconsin, Vermont, Michigan) and working with the National Park Service (Mt. Rainier, Isle Royale). Lindquist has served on numerous regional, state, and international advisory bodies, including two terms as the U.S. chair of the Lake Superior Binational Forum (U.S. and Canada). He holds a degree in Environmental Management from the University of Wisconsin. The Upper Great Lakes Stewardship Initiative is the newest regional hub, beginning services in the 2013–2014 school year.

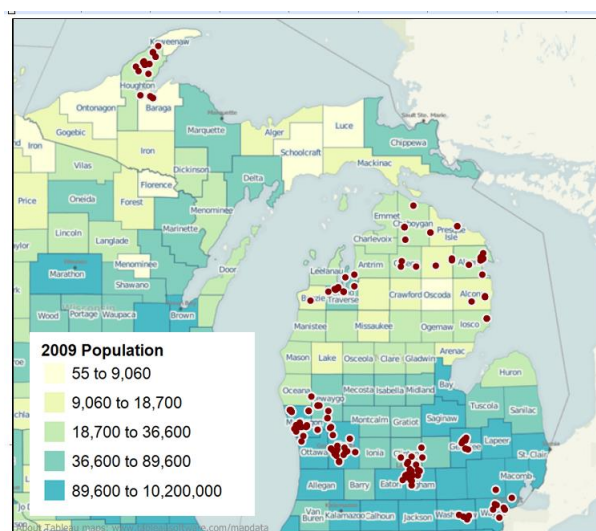


Figure 1: Schools served through the 2012–2013 school year

Organizational Experience

The proposed project is a natural extension of work performed within the GLSI network over the past six years. Between the 2007–2008 and 2012–2013 school years, the GLSI hubs collectively have delivered more than 50,000 student stewardship learning experiences by working with 636 teachers in 169 schools to deliver place-based EE. Those place-based

EE efforts have occurred in urban, suburban, and rural contexts (see schools map, previous page) and with the support and involvement of community partners: federal, state, and local governmental agencies; nonprofits working in environmental and education issues; private businesses; higher education; and philanthropy; as well as private citizens and retirees. In support of those efforts, the hubs collectively have delivered or sponsored more than 32,000 hours of teacher professional development.

The GLSI hubs are hosted in diverse organizations that have relevant organizational experience in environmental and educational program delivery. Two of the hub organizations are Michigan Math & Science Centers housed in Intermediate School Districts with expertise in instruction and assessment in math and the sciences. The Institute for the Study of Children, Families, and Communities at Eastern Michigan University, the host organization for the Southeast Michigan Stewardship Coalition, has a lengthy history of direct-service projects, and is currently operating the GEAR UP program, a U.S. Department of Education-funded effort supporting college entry in Wayne-Westland, Willow Run, and Ypsilanti schools, and 21st Century Community Learning Centers in those same districts. Grand Valley State University, the home of the Groundswell hub, has partnered on service-learning initiatives with schools in Kent County, including the Grand Rapids Public School District, Wyoming Public School District, and Kenowa Hills Public School District. The Grand Traverse Conservation District and the Superior Watershed Partnership, nonprofits that host hubs in northwest Michigan and the central Upper Peninsula, have extensive experience in natural resources management and youth education programming.

The work of the GLSI hubs has been initiated, coordinated, and supported by the GLFT and Public Sector Consultants Inc., the contracted manager for the Trust. The Great Lakes Fishery Trust (GLFT) was created in May 1996 as a means of compensating the residents of Michigan for the lost use and enjoyment of the fishery resources of Lake Michigan caused by the operation of the Ludington Pumped Storage Plant (LPSP), located in Ludington, Michigan. In 1973, Consumers Energy (formerly Consumers Power Company) and the Detroit Edison Company began commercial operation of the LPSP. The jointly owned hydroelectric generating facility draws water from Lake Michigan into an upland reservoir through large, reversible pump-turbines during periods of low electric demand and generates power by discharging water from the reservoir during periods of peak demand.

By 1986, it had become apparent that the plant's operations were causing fish losses. When the utilities were unable to implement effective barriers to prevent fish losses at the facility as required under its Federal Energy Regulatory Commission (FERC) license, the Michigan United Conservation Clubs (MUCC) and the National Wildlife Federation (NWF) initiated legal actions. The State of Michigan also intervened in the federal licensing proceeding to require installation of devices to minimize future fish losses, and filed a separate action in state court seeking compensation for fish losses.

After nearly 10 years of legal proceedings and negotiations, MUCC, NWF, the U.S. Department of the Interior, and several Indian tribes joined the State of Michigan in a comprehensive settlement with the utilities. The settlement agreement provided for the creation of the Great Lakes Fishery Trust, which is governed by a board of trustees and by a scientific advisory team. The GLFT operates as a grantmaker and program manager and provides grant funding for fisheries research, fishing access, and environmental education in the Great Lakes region.

Public Sector Consultants has an extensive portfolio of environmentally themed past efforts, including multiyear efforts in land use, fisheries, and energy; and has managed multi-site grant programs for the Trust for more than 15 years.

Federal Grants in the Last 3 Years

The GLSI and GLFT have received no federal grants within the three years. The GLSI is a named partner in an ongoing 2012 grant (issued to Earth Force) from the National Oceanic and Atmospheric Administration's Environmental Literacy Grant (NOAA-ELG) program. All associated progress reports have been submitted in a timely fashion.

Michigan Saves, which is staffed by Public Sector Consultants, is a recent past recipient of two U.S. Department of Energy Better Buildings Neighborhood Program grants totaling \$35 million.

Three GLSI hubs have received FY 2012 funding from the Great Lakes B-WET program. Descriptions of these efforts are provided below. The Lake Superior Stewardship Initiative effort has successfully closed with all reporting submitted and accepted as required. The Groundswell FORCES and Northeast Michigan efforts remain open, with FY 2013 year-two continuation funding, and all reports required to date successfully submitted. Please

note that the Northeast Michigan effort is a collaborative regional effort involving an array of partners that collectively operate as the Northeast Michigan Great Lakes Stewardship Initiative.

**Groundswell FORCES
Grand Valley State University**

Two secondary schools in Kent County, Michigan, with training from Groundswell, a Great Lakes Stewardship Initiative Hub, will be recognized as “FORCES” schools. The Groundswell FORCES program will provide professional development to one administrator and four teachers in each FORCES school to integrate Great Lakes Literacy principles into school-wide curriculum as an effort to create and sustain systemic curriculum changes. Additionally, each school will be assisted in implementing a school-wide, place-based service-learning project developed by the students. Projects will serve as school-wide meaningful watershed educational experiences creating a culture of stewardship. These projects will engage a minimum of two school administrators, eight teachers, and 250 to 500 students.

Contact: Michael Posthumus, Grand Valley State University College of Education: Center for Educational Partnerships, posthumi@gvsu.edu

**Lake Superior Stewardship Initiative
Copper County Intermediate School District**

The Lake Superior Stewardship Initiative (LSSI) will involve 15 school-community teams composed of 85 teachers, 50 community partners, and 2500 students from Houghton, Baraga, and Keweenaw counties of Michigan in environmental stewardship activities in the Lake Superior watershed. The major goal of LSSI is to prepare K–12 students to become knowledgeable citizens, concerned about the Great Lakes, and actively engaged in stewardship activities that will contribute to the health, conservation, and future protection of the Great Lakes and their watersheds. Four over-arching themes guide the implementation of the LSSI: developing a connection to place; responsibility to community; partnerships between teachers, students and community members to address community needs; and active stewardship of the Lake Superior watershed.

Contact: Shawn Oppliger, Western UP Center for Science, Mathematics and Environmental Education, shawn@copperisd.org

**Our River, Our Future—Transforming a Community through the Rediscovery of its Local Watershed
The Community Foundation for Northeast Michigan**

Our River, Our Future will establish a partnership among more than 15 city, state, federal, and nonprofit organizations committed to the betterment of northeast Michigan through Great Lakes literacy, school improvement and ecologically conscious economic development. Working through a Leadership Team, the partnership will engage K–12 teachers and students in meaningful watershed experiences that bring them together with community organizations to learn about and steward the Thunder Bay River and Lake Huron as part of their school-supported curriculum. A graduate student will be brought in to support students and community partners in gathering, interpreting, and disseminating data in support of an ongoing management plan for several Thunder Bay River hydroelectric dams, slated for potential retirement in 2040. Public outreach events at the Thunder Bay National Marine Sanctuary and elsewhere will allow students to practice communications skills and build a network of like-minded peers from across the watershed. Our River, Our Future will utilize an outcomes-based, formative and summative evaluation model to assesses gains in Great Lakes Literacy, student achievement, and self-efficacy with respect to stewardship attitudes and behaviors.

Contact: Sarah Waters, Thunder Bay National Marine Sanctuary, sarah.a.waters@noaa.gov

Mary Whitmore, PhD

EDUCATION

PhD Department of Zoology, University of Queensland, Australia (1984) Ecology and Behavioral Biology
BS Michigan State University (1976, Honors) Dual Major: Zoology/Wildlife Biology

RELEVANT EXPERIENCE AND EMPLOYMENT

- Program Coordinator, Great Lakes Stewardship Initiative, a \$12 million, 10-year effort to develop the next generation of stewards of the Great Lakes (2007–present)
- Executive Director of SEE-North, one of 25 regional mathematics and science centers funded by the Michigan Legislature (1987–2007)
- Editor, SCoPE Site Project—Instructional Units for K–12 Teachers (October 2001–October 2003)
- Co-Coordinator in Development, Michigan Statewide Systemic Initiative (1993–1997)
- Resident Ecologist and Director of Science Education (1984–1994), University of Michigan
- Consultant in Science Education, W.K. Kellogg Foundation (1990–1993)

NOTABLE CONTRIBUTIONS TO SCIENCE EDUCATION

A Special Summer Institute for K–12 Science Teachers (1988–1995; 3 consecutive grants from National Science Foundation) Designed eight-week summer program and school-year follow-up activities; served as core faculty/administrator for professional development program for outstanding science teachers in Michigan.

Leadership, Education, and Development (1987–1994; 7 consecutive grants from Michigan Department of Education) Designed year-long model program; served as faculty/administrator to enhance instruction and leadership of K–12 science teachers in northern Michigan.

SEE-North (1988–2007; 19 consecutive grants) Founder and executive director of regional mathematics, science, and environmental education center for K–2 students, teachers, and communities in northern Michigan.

Great Lakes Stewardship Initiative (2007–present; 7 consecutive grants from Great Lakes Fishery Trust) Designed and now coordinate a model program to develop environmental stewards of the Great Lakes.

FELLOWSHIPS AND AWARDS

- Tower Guard Award (outstanding freshman woman) at Michigan State University (1973)
- Mortar Board Award (outstanding senior woman) at Michigan State University (1976)
- Rotary International Graduate Fellowship (1977)
- University of Queensland Postgraduate Research Scholar (1978–1982)
- Nominee, Postdoctoral Research Fellowship, Miller Institute for Basic Research, University of California at Berkeley (1982)
- Frank M. Chapman Award, American Museum of Natural History (1985)
- Michigan Association of Environmental and Outdoor Educators Award (1993)
- Michigan Mathematics and Science Centers Achievement Award (2007)

APPENDIX D: PARTNERSHIP LETTERS OF COMMITMENT



2-1-2014

RE: EPA Environmental Education Grant Proposal, Great Lakes Stewardship Initiative

To Whom It May Concern:

University Outreach at the University of Michigan-Flint has served as a regional hub of the Great Lakes Stewardship Initiative (GLSI) since 2009. The Discovering PLACE hub is a collective of Flint-area K-12 schools, University faculty and staff, community organizations, and parents working to connect young people to their communities. Discovering PLACE provides resources and support to implement place-based education (PBE) activities with youth by offering sustained teacher professional development and facilitating school-community partnerships.

Through PBE, Discovering PLACE strives to make connections between urban life and the health of the Great Lakes relevant for urban youth. Currently, twenty-two teachers and over 800 youth across three school districts are engaged in the Discovering PLACE program participating in PBE projects that address local food systems, habitat restoration, promoting healthy communities and watersheds.

University Outreach fully supports the GLSI's application to the 2014 Environmental Protection Agency's Environmental Education Grant Competition. We feel that, if awarded, the grant would assist in expanding the reach of state-wide PBE efforts and would align well with the work of the Discovering Place hub and participating schools, teachers, and students.

Through Discovering PLACE, University Outreach would support implementation of the EPA grant by:

- Coordinating with the statewide GLSI hubs to align our hubs processes and projects to correspond with the timelines and protocols of the EPA grant.
- Nominate teaching teams as candidates to implement place-based environmental education projects.
- Monitor and support teaching teams through professional development, development and collection of student assessment and artifacts, and provision of the individual support and resources necessary for schools to successfully implement environmental education projects.
- Engage with GLSI staff, other hub representatives, teachers, and partners to develop content and produce recommendations and tools for dissemination regarding the development and implementation of quality place-based environmental education.

We appreciate your consideration of the GLSI's grant proposal.

Sincerely,

Jacob Blumner
Interim Director, UM-Flint University Outreach
Hub Leader, Discovering Place

University of Michigan-Flint
University Outreach
432 N. Saginaw St., Suite 1001, Flint, MI 48502
Phone: (810) 424-5433 * Fax: (810) 424-5484



Northeast Michigan Great Lakes Stewardship Initiative

January 29, 2013

Mary Whitmore, Coordinator
Great Lakes Stewardship Initiative
230 N. Washington Square, Suite 300
Lansing, MI 48933

Dear Dr. Whitmore:

On behalf of the Northeast Michigan Great Lakes Stewardship Initiative (NE MI GLSI), we offer our support for the Michigan Great Lakes Stewardship Initiative Network's EPA Environmental Education project proposal to *Place-based Models for K-12 Stewardship Education*. We have read, understand, and fully appreciate the opportunity for our network of northeast Michigan educators and community partners to connect and collaborate with this important project promoting and advancing place-based environmental stewardship education practices in Michigan.

The NE MI GLSI (www.nemiglsi.org) is a regional network of education and community partners collaborating to protect our Great Lakes and natural resources of northeast Michigan through hands-on learning in (and with) the community. In 2013, our network and partnership engaged more than 6,000 youth (nearly 1 in 5 youth in our rural region) and 118 educators across eight Northeast Michigan counties, through hands-on learning, in fielding Great Lakes stewardship projects directly enhancing their local communities and natural environment. Leadership and programming support for the NE MI GLSI is provided in partnership by: Alpena-Montmorency-Alcona (AMA) Educational Service District, AMA/Iosco Math and Science Center, Cheboygan-Otsego-Presque Isle (COP) Educational Service District, Michigan State University Extension 4-H Youth Programs, Michigan Sea Grant, Community Foundation for Northeast Michigan, Northeast Michigan Council of Governments, NOAA Thunder Bay National Marine Sanctuary, U.S. Fish and Wildlife Service, Huron Pines, and area schools. Funding and support provided by Great Lakes Fishery Trust's Great Lakes Stewardship Initiative.

We will support to this project through coordination and linkages with regional partnerships and programming of the NE MI GLSI network, understanding our role to include: (1) Facilitating access to this established, regional network of school and community partnerships, identifying candidate educator teams for this GLSI project; (2) Monitor and support funded teams through professional development offered through our network; and (3) Collaborate with GLSI staff and the staff of other regional hubs to discuss and develop written informational products, illustrating and communicating place-based environmental education best practices among a diversity of school, community, and scholarly audiences. Through our network we hope to enable the statewide GLSI network project team to effectively engage interested educators and youth through this project, provide sustaining support for educators through professional development opportunities and resources generated through this project, and create community-valued stewardship linkages through applied research, principles and best practices of place-based education.

We look forward to the prospect of our educators and students collaborating as part of this project advancing place-based environmental stewardship education across our state!

Sincerely,

Daniel Moffatt, Program Coordinator
Northeast Michigan Great Lakes Stewardship Initiative
www.nemiglsi.org

MICHIGAN STATE UNIVERSITY

January 30, 2014

TO: EPA Environmental Education Grant Reviewers and Staff
FROM: Shari L. Dann, Associate Professor, MSU; Margaret Holtschlag and Mark Stephens, GRAND Learning Network

Dear Reviewers and Staff:

We are writing in support of the EPA Environmental Education Grant Proposal submitted by the Great Lakes Stewardship Initiative (GLSI). Together, we represent the GRAND Learning Network, which serves as one of the many regional hubs of the Great Lakes Stewardship Initiative since 2007. Our work focuses on four themes: Great Lakes and Local Watersheds, Community Engagement, Sense of Place, and Stewardship. To date, we have engaged more than 3,100 students in grades DK-8 in active stewardship projects and learning that benefit real-world issues of importance to our community partners. We work with schools, teachers, students, parents and community organizations to develop place-based EE programming that helps youth learn academic content while they become stewards.


We are thrilled to support and be part of this proposed project, and we are committed to participate thoroughly. More specifically, we anticipate the following roles. First, we will work with the GLSI and the hub network to frame and then follow project processes and timelines. We will nominate a candidate team to the GLSI. Since our hub was designed to feature two school districts from each demographic area in mid-Michigan (urban, suburban, and rural), we would nominate one of our six school districts to serve as a candidate team. We work extensively with elementary teachers in Lansing and Holt (urban), DeWitt and Haslett (suburban), Bath and Laingsburg (rural).

Secondly, we agree to monitor and provide coaching and other technical support to the funded team and continue to provide professional development. We will engage our corps of three retired Teacher Leaders in our hub to collect artifacts that constitute authentic documentation of student learning and outcomes (such as student work products, teacher lesson plans, photos and other images). We, as a staff, will work with our retired Teacher Leaders to conduct conversations and on-going coaching with the teacher team about their decisions concerning pedagogy, specific instructional choices, resources used, community partners engaged, and other matters that are central to Great Lakes Place- Based Education.

Thirdly, we as staff and our retired Teacher Leaders will participate with GLSI staff and the staff of the GLSI network of hubs to develop useful products as a result of this collaborative work. We understand that these products will include: a list of quality principles for place-based environmental education, a white paper on context-specific (urban, rural, suburban) benefits of place-based EE, and a multimedia case study based on information collected from our participating team. We look forward to discussions with the GLSI hubs participating in this project to formulate, more specifically, what these products will entail and how the products will be useful to educators in the broader Great Lakes region as we collectively tackle the large, complex issues facing our communities in regards to Great Lakes water quality and protection.

We have read and fully support the proposal.

Sincerely,


Shari L. Dann


Margaret Holtschlag


Mark Stephens



**College of
Agriculture and
Natural Resources**

**Department of
Community
Sustainability**

Natural Resources Building
480 Wilson Road Room 131
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517-353-5190
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Michael Posthumus
Grand Valley State University
DeVos 396 C
401 W Fulton ST
Grand Rapids, MI 49504

1/30/2014

Great Lakes Fisheries Trust
230 N. Washington Square
Suite 300
Lansing, MI 48933

To Whom It May Concern:

RE: EPA Environmental Education Grant Proposal, Great Lakes Stewardship Initiative (GLSI):

Groundswell has served Kent County as a regional hub of the Great Lakes Stewardship Initiative since 2009 and prides itself as offering the most comprehensive environmental education professional development in our region.

Our role in the Kent County community is to help teachers, students, and citizens develop into thoughtful stewards of our natural resources through high quality place-based environmental education and projects. We accomplish this task by connecting stakeholders, schools, and volunteers in academic service learning initiatives centered on real environmental issues largely within the Grand River Watershed.

We are excited to participate in this EPA grant to begin leveraging additional high quality programs while creating more support for our committed teacher teams and schools. Additionally, the benefits of this collaborative work will improve the state of environmental education throughout our region.

Our expertise will support many components of the proposal including:

- 1) Nominating, supporting, and monitoring exceptional school teams to work with the GLSI
- 2) Providing professional development, collecting or documenting student work products, teacher lesson plans, images, and video, and facilitating discussions aimed at improving environmental education efforts throughout the state
- 3) Collaborating with grant partners and other participating hubs to assist in the development of written products included in the proposal.

We are overwhelming in support of this effort and are excited to help the GLSI accomplish its goals.

Sincerely,

Michael Posthumus
Groundswell, GVSU College of Education Center for Educational Partnerships

GVSU Authorizing Agent Signature



January 30, 2014

To Whom It May Concern:

RE: EPA Environmental Education Grant Proposal, Great Lakes Stewardship Initiative:

My organization, the Grand Traverse Conservation District (GTCD), has served as a regional hub of the Great Lakes Stewardship Initiative (GLSI) since 2009. Since then, the GLSI has allowed the GTCD to provide leadership and resources to support place-based Environmental Education (EE) programming that meets student curriculum needs while serving community-focused stewardship needs in the Grand Traverse region.

With GLSI's support from the EPA we are excited at the opportunity to expand the GLSI's place-based EE programming by:

1. Working with fellow GLSI hubs on:
 - a. Engagement of teams of place-based EE practitioners supporting local place-based EE efforts fielded with students
 - b. Compensation to teachers who contribute to the project's products
 - c. Nominating candidate teams to the GLSI.
2. Collaborating with the GLSI staff and members of other GLSI regional hubs at and outside of the GLSI's 2015 Great Lakes Place-based Education Conference to discuss and develop written informational products, including:
 - a. Multimedia case studies, drawn from documentation of GLSI's place-based EE programming
 - b. Quality principles for place-based environmental education
 - c. The context-specific (urban, rural, suburban) benefits of place-based EE
3. Monitoring and supporting funded GLSI teams with:
 - a. Expanded professional development opportunities.
 - b. Documentation and collection of information and tools of what makes GLSI's place-based EE programming possible and successful (student work products, lesson plans, images, video).
 - c. Guidance of teacher team choices related to instruction, assessment, resource materials, etc.

I support the Great Lakes Stewardship Initiative's EPA Environmental Education Grant Proposal expanding the development of knowledgeable and active stewards K-12 making a difference on real-work environmental issues in their local communities through the GLSI's place-based EE programming.

Sincerely,

Connor Miller
Grand Traverse Stewardship Initiative
Program Coordinator
Grand Traverse Conservation District



Grand Traverse
Conservation District

231.941.0960

www.natureiscalling.org

1450 Cass Rd., Traverse City, MI 49685



SOUTHEAST MICHIGAN STEWARDSHIP COALITION

January 24, 2014

Dear Grant Review Committee:

The purpose of this letter is to support the proposal being submitted by the Great Lakes Stewardship Initiative entitled, *Place-Based Models for Stewardship Education in K-12*. The Southeast Michigan Stewardship Coalition (SEMIS) has been a hub of the GLSI since it's inception. Our particular hub serves Southeast Michigan including very diverse communities in and around Detroit. If we are to tackle the significant environmental challenges that we face, we have to learn how to enlarge who we consider to be in our community. By design we have attempted to create a coalition that is a microcosm of democracy in a region that has a long history of segregation and difficulty communicating across boundaries of race, culture, and economic class. Participating schools include 3 schools in Southwest Detroit servicing predominantly Latino populations, 3 schools serving predominantly African American students, a private Catholic school in a working class neighborhood just outside Detroit proper, and two suburban schools in Ann Arbor. In addition to whole schools that we work with, individual Muslim teachers from Dearborn and teachers from a Day Treatment Center are also involved in our program. Also by design, our schools are public, charter-public, and private.

Our Coalition design provides a wonderful opportunity for the EPA. Like most organizations we have been busy doing the work and have not had the resources to codify what we have learned and share it with others. We are at a phase in our development where we are ready to tell our story to a larger audience in a form that they can use to inform their own work. For example, we have a well-developed theory of action that we use internally, and have been recognized as a program of high quality as evidenced by grants received by the National Oceanic and Atmospheric Administration (in partnership with the GLSI and Earth Force), the Spencer Foundation, the National Endowment for the Arts (STEAM project), and the Community Foundation of Southeast Michigan.

The Great Lakes Stewardship Initiative (GLSI) is an historic opportunity to implement and study what works in environmental stewardship education at a moment that is perhaps the most challenging for teachers and schools in recent American history (and perhaps ever). In Michigan, we have seen a 12% drop in per-pupil funding to schools in the last three years at the same time that teachers are expected to help all of their students reach academic standards that are beyond what any society in human history has attempted. How have SEMIS and the GLSI been able to thrive in this environment? What have been our successes, challenges, and lessons learned? We hope that with your help and in collaboration with the other hubs of the GLSI you can assist us in taking our program to the next level and telling this very important and timely story.

Ethan Lowenstein, Ph.D.
Director, Southeast Michigan Stewardship Coalition (SEMIS)



Lake Superior Stewardship Initiative

lakesuperiorstewardship.org



Date: January 24, 2014

To Whom It May Concern:

RE: EPA Environmental Education Grant Proposal, Great Lakes Stewardship Initiative:

The Lake Superior Stewardship Initiative (LSSI) is a regional hub of the Great Lakes Stewardship Initiative (GLSI) since 2008. LSSI is program of the Western UP Center for Science, Mathematics and Environmental Education, one of the 33 regional Math and Science Centers of the Michigan Mathematics and Science Centers Network. Since 2000, Western UP Center has provided high quality teacher and student programming for the nineteen school districts and their communities located in Houghton, Baraga, Keweenaw, Gogebic and Ontonagon counties of Michigan. LSSI is exemplary program involving 14 schools in 10 school districts, 75 teachers, 2250 students and 48 community partners in place-based projects that provide authentic learning experiences, develop future stewards and benefit the local communities in the Lake Superior watershed.

The LSSI leadership team fully understands and supports the GLSI proposal for the 'Place Based Models for Stewardship Education in K-12" project by:

- 1) Work with fellow GLSI hubs to amend and align existing sub-grant processes to correspond with the timelines and other protocols associated with the project. Nominate candidate teams to the GLSI.
- 2) Mentor and support funded teams by providing professional development, curriculum support and collecting artifacts (student work products, lesson plans, images, video).
- 3) Collaborate with GLSI staff and the staff of other regional hubs to develop written informational products, including:
 - a. A list of quality principles for place-based environmental education
 - b. A white paper on context-specific (urban, rural, suburban) benefits of place-based EE
 - c. A set of multimedia case studies (drawing on the documentation we collect in item 2, above)

Thank you for the opportunity to collaborate on this meaningful work.

Sincerely,

Shawn Oppliger

Director of the Lake Superior Stewardship Initiative and the Western UP Center for Science, Mathematics and Environmental Education.

The Lake Superior Stewardship Initiative is part of the Great Lakes Stewardship Initiative, which was established by the Great Lakes Fishery Trust with the support of the Wege Foundation.



SUPERIOR WATERSHED PARTNERSHIP

LAKE SUPERIOR • LAKE MICHIGAN • LAKE HURON

2 Peter White Drive • Presque Isle Park • Marquette, Michigan 49855
Phone: (906) 228-6095 • Fax: (906) 228-6863 • www.superiorwatersheds.org

January 28, 2014

Ms. Megan Gavin
U.S. EPA, Region 5
Environmental Education (AT-18J)
77 West Jackson Boulevard
Chicago, IL 60604

The Superior Watershed Partnership (SWP) is pleased to provide this letter of support for the Great Lakes Stewardship Initiative (GLSI) proposal submitted to the EPA Environmental Education Model Grants Program. The GLSI proposal is titled; *Place-based Models for K-12 Stewardship Education*. The GLSI is a regional leader in Great Lakes education and has pioneered new models in place-based education that have fostered a new generation of environmental stewards.

The SWP works closely with the GLSI staff to further environmental education and stewardship in the Northern Great Lakes (Superior, Michigan and Huron). This includes working with local schools, communities and Native American tribes. If needed, the SWP will provide in-kind match to further the goals of the proposed *Place-based Models for K-12 Stewardship Education* program.

Please do not hesitate to contact me if you require any additional information or documentation regarding SWP commitment to the Great Lakes Stewardship Initiative and their proposal to the EPA Environmental Education Model Grants Program.

Sincerely,

Carl Lindquist, Executive Director

January 30, 2014

To Whom It May Concern:

RE: EPA Environmental Education Grant Proposal, Great Lakes Stewardship Initiative

The Muskegon Area Intermediate School District (MAISD) through our Regional Mathematics and Science Center has served as a regional hub of the Great Lakes Stewardship Initiative since 2007.

The West Michigan Great Lakes Stewardship Initiative (WMGLSI) connects Michigan students to the Great Lakes and their communities by helping teachers move beyond the traditional textbook based curriculum to more authentic place-based education strategies. This is accomplished through sustained teacher professional learning, capacity building for schools and their communities, and direct support for school teams as they develop curriculum, instruction and implementation strategies for needs-based environmental projects in their local communities.

I have read the proposal and understand that our role in the proposed project includes;

- (1) Collaborate with other GLSI Hubs to revise our existing sub grant processes to align with the timelines and protocols of the EPA EE grant.
- (2) Nominate candidate school teams to the GLSI.
- (3) Provide sustained teacher professional learning, support participant teams and monitor their progress in the program, and collect curriculum, instruction, and student products for evaluation.
- (4) Collaborate with our GLSI colleagues to develop the grant deliverables, including
 - a. A list of quality principals for place-based environmental education
 - b. A white paper on context-specific (urban, rural, suburban) benefits of place-based EE
 - c. A set of multimedia case studies

On behalf of the MAISD, the MAISD Regional Math/Science Center, and the WMGLSI I fully support the GLSI EPA Environmental Education Proposal.

Sincerely,



Dave Krebs, Director
West Michigan Great Lakes Stewardship Initiative
MAISD Regional Mathematics and Science Center



RMC Research Corporation
633 17th Street, Suite 2100
Denver, CO 80202

Phone: 303.825.3636; 800.922.3636
Fax: 303.825.1626
www.RMCResearchCorporation.com

January 31, 2014

To whom it may concern,

I am pleased to write this letter of support and commitment to the Great Lakes Fishery Trust/Great Lakes Stewardship Initiative for their proposal to the EPA Environmental Education Model Grants Program. This group is wonderfully dedicated to developing young people into stewards of our land and water, and their project will serve to further the effectiveness of this type of project throughout the United States and the world.

Having been the primary author of the standards for quality of service-learning, I understand the value of using the research to derive proven practices and to create tools to help practitioners to become more effective. If this project is successful in obtaining the grant, I will help them to review the quality principles for place-based environmental education they create. I understand that this will entail review and feedback on the principals, their alignment with research, and their clarity and utility for the field. I will also share my dissemination experience with them. In addition, I will provide feedback on their research design and instrument development.

RMC Research has been a research leader for experiential education since 1993. On behalf of my organization, I am pleased to support this project. There are too few rigorous projects in environmental education in the field, and this one has the potential to be a significant contributor to field development.

Sincerely,

A handwritten signature in black ink, appearing to read "Shelley H. Billig". The signature is fluid and cursive, with the first name "Shelley" and last name "Billig" being the most prominent parts.

Shelley H. Billig, Ph.D.,
Vice President
RMC Research Corporation



School of Human Ecology
4153 Nancy Nicholas Hall
Madison, WI 53706-1507
608/263-2291
FAX: 608/265-1171

January 28, 2014

To Whom It May Concern:

RE: 2014 EPA Environmental Education Grant Proposal, Great Lakes Fishery Trust (applicant)
Place-Based Models for Stewardship Education in K-12

I am very interested in the proposal from the Great Lakes Stewardship Initiative (GLSI) to engage their nine hubs in identifying a set of shared “quality principles” for environmental education. This is exactly the kind of developmental evaluation work that is needed to move the field of place-based environmental education forward.

I would be pleased to serve as a member of the expert panel that will review and provide feedback on a draft set of quality principles for PB EE that will be drawn from relevant literature and from the experiences of teachers and community partners in the GLSI hubs. As a member of the expert panel, I also am willing to review the principles for their substantive merit, their completeness, and their potential to be valid and reliable if used in developmental evaluation of place-based environmental education.

As a developmental psychologist, I have a long history of working with teachers and community based organizations in developing measures and assessing the efficacy of formal and non-formal learning opportunities for children. I support the proposed work and will be pleased to serve in this role.

Sincerely,

Constance A. Flanagan
Professor, School of Human Ecology
Program on Civil Society and Community Research
University of Wisconsin-Madison



1775 Graham Ave., Ste. 204
Henderson, NC 27536
Phone: 252-433-8844 Fax: 252-433-8846

January 29, 2014

To Whom It May Concern:

RE: EPA Environmental Education Model Grants Program Application from Great Lakes Fishery Trust/Great Lakes Stewardship Initiative

As a long-time proponent of place-based education, I have a great interest in the proposed project, "Place-based Models for K-12 Stewardship Education." I understand that if the project is funded, my role will be as follows:

1. Receive from the GLSI a draft set of quality principles for place-based environmental education, drawn from the published literature as well as the experience to date of the GLSI regional hubs.
2. Review and comment on the substantive merit of these principles considering their consistency with published research, their potential to be valid and reliable if used to examine the level of development of a place-based EE effort, and their completeness.

I have read the proposal, and will serve in this role.

Sincerely,

Doris Terry Williams, Ed. D
Executive Director

APPENDIX E: LIST OF SOURCES AND CITATIONS

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KEY CONTACTS FORM

Authorized Representative: *Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.*

Name: _____

Title: _____

Complete Address: _____

Phone Number: _____

Payee: *Individual authorized to accept payments.*

Name: _____

Title: _____

Mail Address: _____

Phone Number: _____

Administrative Contact: *Individual from Sponsored Program Office to contact concerning administrative matters (i.e., indirect cost rate computation, rebudgeting requests etc.)*

Name: _____

Title: _____

Mailing Address: _____

Phone Number: _____

FAX Number: _____

E-Mail Address: _____

Principal Investigator: *Individual responsible for the technical completion of the proposed work.*

Name: _____

Title: _____

Mailing Address: _____

Phone Number: _____

FAX Number: _____

E-Mail Address: _____

Web URL: _____